

CLAIMS

What is claimed is:

1. A removable storage module, including:
 - a housing for holding a plurality of disk drives;
 - 5 a connector mounted to the housing;
 - a plurality of disk drives disposed in the housing, and each drive having an I/O channel;
 - a plurality of switches disposed within the housing, each switch having at least three ports;
 - 10 wherein the I/O channel each disk drives is coupled with a first port of a corresponding switch of the plurality of switches;
 - wherein the plurality of switches are selectively controllable such that the I/O channel of the disk drive which is coupled to the first port of the switch is coupled with either the a second port or a third port of the switch; and
 - 15 wherein the second port and the third port of the switches area coupled with the connector, such that data from the I/O channel of the drive can be transmitted through the connector from either the second port or the third port of the switch.
2. The removable disk drive module of claim 1, wherein the plurality of disk drives includes at least for disk drives, and the plurality of switches includes at least four switches.
- 20 3. The removable disk drive module of claim 1, where the I/O channel for each of the disk drives is a serial communication channel.
- 25 4. A removable storage system including:
 - a removable storage module having a plurality of disk drives, and each of the disk drives having an I/O channel;
 - a plurality of switches, wherein each of the plurality of switches corresponds to one of the plurality of disk drives, wherein a first port of each of the plurality of switches is coupled the I/O channel for a corresponding disk drive;

a controller which is coupled with each of the plurality of switches and operable to control the plurality of switches such that each of the plurality of switches couple the I/O channel of the plurality of drives with either a second port or a third port of the switch.

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5. The removable storage system of claim 4, further including:

docking base unit having an A channel and a B channel for each of the plurality of disk drives;

10 wherein the A channels of the docking base unit are coupled with a first computer, and the B channels of the docking base unit are coupled with a second computer; and

wherein the A channels are coupled with the second port of the plurality of switches, and the B channels are coupled with the third port of the plurality of switches.

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6. The removable storage system of claim 5, wherein the controller is coupled with the first computer and the second computer, and based signals received from the first computer and the second computer, the controller causes the plurality of switches to be in a first position, or in a second position.

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7. The removable storage system of claim 6, wherein when the plurality of switches are in a first position the I/O channels of the plurality of drives are coupled with the A channels of the docking base unit, and when the plurality of switches are in a second position the I/O channels of the plurality of drives are coupled with the B channels of the docking base unit.

25 8. The removable storage system of claim 4, wherein the plurality of disk drives includes at least four disk drives, and the plurality of switches includes at least four switches.

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9. The removable storage system of claim 4, wherein the I/O channel for each of the plurality of disk drives is a serial communication channel.

10. The removable storage system of claim 4, wherein the plurality of disk drives are configured for RAID operation.

5 11. A system for controlling connections between a plurality of computers, and a removable storage module, the system including:

a storage module chassis including a first docking base unit having at least a first I/O channel and a second I/O channel;

10 a removable disk drive module including a first disk drive with a third I/O channel coupled to a first port of a first switch, and the first switch having a second port and a third port;

wherein the second port of the first switch is coupled with the first I/O channel of the docking base unit, and the third port of the switch is connected the second I/O channel of the docking base; and

15 a controller coupled to the switch which controls the switch such that data can be transmitted from the disk drive through either the second port of the switch or the third port of the switch.

12. A storage system, including:

20 a removable disk drive module having a plurality of disk drives;

a docking base unit having a pair of I/O channels corresponding to each of the plurality of disk drives, where a first channel of the pair of I/O channels is connected with a first computer, and a second channel of the pair of I/O channels is connected with a second computer; and

25 a plurality of switches, wherein each of the switches corresponds to one of the disk drives of the plurality of disk drives, and a first port of each of the switches is coupled with an I/O channel of the corresponding disk drive, and each of the plurality of switches has a second port and a third port, and the second port is coupled to the first channel of pair of channels which correspond to the disk drive, and the third port is coupled to the second channel of the pair of channels which correspond to the disk drive.

13. The docking base unit of claim 12, wherein the docking base unit has multiple I²C interfaces for connection to a first PCI Raid controller card residing in the first computer, and to a second PCI RAID controller card residing in the second computer, wherein the 5 docking base unit includes a controller for receiving the I²C communications from the first PCI Raid controller and the second PCI RAID controller.

14. The docking base unit of claim 12, wherein the docking base unit includes plurality of Serial ATA connectors, and each of the channels of the plurality of pairs of 10 channels is coupled to either one of the first computer or the second computer by one of the plurality of serial ATA connectors.

15. The docking base unit of claim 12, including a controller, which is coupled with the plurality of switches, and controls the switches such that the plurality of switches 15 connect I/O channels of the plurality of drives with either the first channel of the second channel of the pair of I/O channels corresponding to each of the plurality of drives.

16. The docking base unit of claim 15, including a first connector for receiving a signals from the first computer, and a second connector for receiving signals from the second 20 computer, wherein based on the signals from the first computer and the second computer, the controller operates to cause each of the plurality of switches to connect the I/O channel for each of the plurality of drives, with either the first computer or the second computer.